



# Mathematics

## Intent

At Redscope Primary School we recognise the importance of mathematics not just as core subject but as a fundamental skill for life. We aim to link maths learning to real life contexts, recognising it is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy.

We aim to provide a mastery curriculum which caters for the needs of all individuals to enable them to calculate fluently, reason logically, problem solve and think in abstract ways.

Teaching will nurture a growth mindset and build children's confidence in Maths.

Our teachers will provide lessons in which children master concepts one step at a time in lessons that embrace a Concrete-Pictorial-Abstract (C-P-A) approach, avoid overload, build on prior learning and help children see patterns and connections.

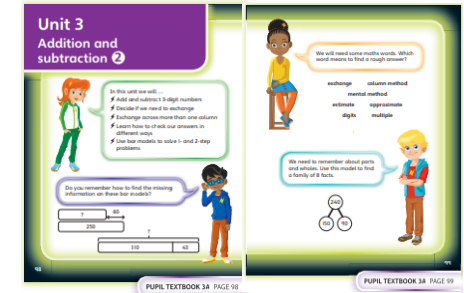
Our ethos is that all children can achieve in Maths through daily practice to enable our learners "To be the best that we can be!"

## Implementation

In order to improve our mastery approach and further improve the quality and consistency of our maths teaching, we have implemented Power Maths – a government recommended, high-quality mastery textbook. At the heart of Power Maths is a clearly structured teaching and learning process that helps every child masters each maths concept securely and deeply. For each year group, the curriculum is broken down into core concepts, taught in units. Each unit is then divided into smaller learning steps – lessons.

## Unit Starter

Each unit begins with a unit starter, which introduces the learning context along with key mathematical vocabulary, structures and representations.



## The lesson structure



Same Day Intervention

## Power Up ⌚ 5 minutes

Each lesson begins with a Power Up activity (available via the online subscription) which supports fluency in key number facts.

The whole-class approach depends on fluency, so the Power Up is a powerful and essential activity.

**TOP TIP**  
If the class is struggling with the task, revisit it later and check understanding.

Power Ups reinforce key skills such as times-tables, number bonds and working with place value.

Unit 2: Lesson 2

### Power Up

Use number bonds to 10 to help with number bonds to 100.

$\bullet\bullet\bullet + \square = 10$	So I know ... $\text{    } + \square = \square$
$10 - 4 = \square$	So I know ... $100 - \square = \square$

Explain to your partner how you can use this ten frame to find a number bond to 100.

●	●	●	●	●
●	●	●		

I wonder if I can turn the ten frame into an addition or subtraction number sentence.

## Implementation continued

### Discover 10 minutes

A practical, real-life problem arouses curiosity. Children find the maths through story-telling.

A real-life scenario is provided for the Discover section but feel free to build upon these with your own examples that are more relevant to your class.

TOP TIP


Discover works best when run at tables, in pairs with concrete objects.

Question 1 a) tackles the key concept and question 1 b) digs a little deeper. Children have time to explore, play and discuss possible strategies.

Unit 4: Multiplication and division (1), Lesson 13

### Understanding divisibility 1

Discover



Lexi Zac

- Lexi and Zac are using lollipop sticks to make squares. How many squares can they make? How many lollipop sticks are left over?
  - How would the answer change if they had 14 lollipop sticks? What about 15, 16 or 17 lollipop sticks?

188

### Share 10 minutes

Teacher-led, this interactive section follows the Discover activity and highlights the variety of methods that can be used to solve a single problem.

Bring children to the front (or onto the carpet if you have this area) to discuss their methods. Pairs sharing a textbook is a great format for this!

Unit 4: Multiplication and division (1), Lesson 13

### Share

We call the amount left over the **remainder**.

a) Four lollipop sticks make one square. They can make 3 squares with 1 lollipop stick left over.

I will try organising my work in a table.

Number of sticks	Working	Number of squares	Number of sticks left over
14		3	2
15		3	3
16		4	0
17		4	1

189

Your Teacher Guide gives target questions for children. The online toolkit provides interactive structures and representations to link concrete and pictorial to abstract concepts.

TOP TIP

Bring children to the front to share and celebrate their solutions and strategies.

## Think together

10 minutes

Children work in groups on the carpet or at tables, using their textbooks or eBooks.

TOP TIP

Make sure children have mini whiteboards or pads to write on if they are not at their tables.

Unit 4: Multiplication and division (1), Lesson 13

### Think together

- Lexi and Zac use more lollipop sticks. How would you complete the table?

Number of sticks	Working	Number of squares	Number of sticks left over
18		4	
19			
20			

- Describe the pattern that Lexi can see.
 

I can see a pattern in the number of lollipop sticks left over.

Lexi
  - Is Zac correct?
 

I don't think you can have more than 3 lollipop sticks left over.

Zac

190

Using the Teacher Guide, model question 1 for your class.

Question 2 is less structured. Children will need to think together in their groups, then discuss their methods and solutions as a class.

In questions 3 and 4 children try working out the answer independently. The openness of the challenge question helps to check depth of understanding.

## Practice 15 minutes

Using their Practice Books, children work independently while you circulate and check on progress.

Questions follow small steps of progression to deepen learning.

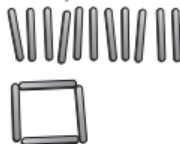
TOP TIP

Some children could work separately with a teacher or assistant.

Unit 4: Multiplication and division (1), Lesson 13

### Understanding divisibility 1

- Lexi has 11 lollipop sticks. She makes squares, like this.



- Draw the squares that Lexi makes.

- How many complete squares can Lexi make? Lexi can make  complete squares.
- What is the remainder? The remainder is  lollipop sticks.
- What if Lexi makes triangles with the sticks? How many complete triangles can she make? What is the remainder? There are  complete triangles and the remainder is .

191

Are some children struggling? If so, work with them as a group, using mathematical structures and representations to support understanding as necessary.

There are no set routines: for real understanding, children need to think about the problem in different ways.

## Reflect ⌚ 5 minutes

'Spot the mistake' questions are great for checking misconceptions.

The Reflect section is your opportunity to check how deeply children understand the target concept.

Unit 6: Multiplication and division (1), lesson 5.2

3 Max makes square blocks from cubes, like this.

He makes 5 square blocks and has a remainder of 3 cubes.

How many cubes did Max start with?  
Max started with [ ] cubes.

**Challenge**

**Reflect**

Explain why Aki is correct.

When you divide by 5, the greatest remainder is 4.

Aki

• \_\_\_\_\_  
• \_\_\_\_\_  
• \_\_\_\_\_

141

The Practice Books use various approaches to check that children have fully understood each concept.

Looking like they understand is not enough! It is essential that children can show they have grasped the concept.

The curriculum time for mathematics is non-negotiable and will be followed by all staff in school (5 minutes basic skills and 1 hour maths sessions daily from Y1-6; and 30 minute daily sessions in Nursery and Reception which are then consolidated through the enhancements in the learning environment

Daily basic skills sessions recap and rehearse key skills to aid retention and support fluency (weekly arithmetic take up part of these in KS2)

## Interventions

In lessons some children will need to spend longer on a particular concept (through interventions or additional lessons), whilst others will reach deeper levels of understanding. Interventions enable most learners to continue to progress with their peers. Occasionally some SEND children with an identified need may need more support and have specialist provision put in place through an IEP. In Years 5 and 6 streaming is used to allow teachers to focus their teaching on specific gaps.

## Assessment

Formative assessment is threaded throughout each lesson and unit of work; and appropriate revisions to planning are made by the class teacher to ensure all lessons are tailored to best meet the needs of their children enabling the vast majority of children to progress through the curriculum content at the same pace. Regular and ongoing formative assessment informs teaching, as well as intervention, to support and enable the success of each child. Summative assessments take place at the end of a unit and termly (PUMA tests in Y1-6) and planning is adjusted accordingly. Children's attainment and progress is discussed by teachers and Senior Leaders and if progress is not made, support is immediate and steps provided. Children's attainment and progress is also discussed with parents/carers during parent's evenings.

## **Impact**

The implementation of this curriculum ensures that when children leave Redscope Primary School, they are competent and confident mathematicians.

### Performance Indicators

We use the following performance indicators to assess the impact of our Maths curriculum:

- across EYFS, KS1 and KS2 children reach at least the national expected standard
- as many children as possible make more than expected or accelerated progress
- children enjoy mathematics
- children talk confidently about what they are doing in mathematics

We also measure the impact of our Maths curriculum through:

### Monitoring

Monitoring is undertaken in various ways:

- The Mathematics Subject Leader /SLT observes lessons usually with a focus that is a whole-school issue or area for development.
- Monitoring of childrens' work in maths books and on Seesaw app.
- Learning Walks – usually with a specific focus of interest. This includes evaluating the quality of the learning environment and use of working walls.
- Staff, parent/carer and pupil voice

We see assessment as an integral part of the teaching process and strive to make our assessment purposeful, allowing us to match the correct level of work to the needs of the children, thus benefiting the children and ensuring progress.

Information for assessment will be gathered in various ways: by talking to the children, observing their work, marking their work, etc. Teachers will use these assessments to plan further work and inform the design of future lessons. We also use: PUMA tests 2x per year in Years 1, 3, 4 and 5 and previous SATs papers for Years 2 and 6, to support our assessment.

Moderation Teachers take part in moderation sessions within school, with other local community schools and teachers attend LA Moderations with other schools. These moderation meetings enable teachers to moderate each other's judgements against agreed criteria to ensure parity.